

Amendments to the Claims

Please amend claims 7-9. Please add claims 11-17. The claim listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Original) For use in a data communication network including a wireless link for the transfer of data packets from a first machine to a second machine, the wireless link having a multitude of base stations which may be selectively designated to receive data packets from the first machine and a subscriber unit connected to the second machine for receiving data packets from a selectable one of the base stations, a method of maintaining data throughput during a handoff from a first one of the base stations to a second one of the base stations as requested by the subscriber unit, which comprises the steps of:

uniquely designating only the first and second base stations for simultaneous receipt of the data packets from the first machine in response to the handoff request;

storing the data packets received by the second base station after such handoff request but before handoff is executed; and

forwarding a selected subset of the stored data packets to the subscriber unit after handoff is executed.

2. (Original) A method as defined in claim 1, further comprising the step of discontinuing the designation of the first base station to receive data packets from the first machine after handoff is executed.

3. (Original) A method as defined in claim 1, in which the data communications network is adapted to operate with the Mobile IP protocol, and in which the designating step comprises registering the first and second base stations as simultaneous Mobile IP bindings for the subscriber unit.

4. (Original) For use in a wireless communication link adapted to operate in accordance with the Mobile IP protocol and comprising, in combination, a subscriber unit constituting a Mobile IP mobile node, a Mobile IP home agent associated with the mobile node's home network, and first and second base stations respectively associated with first and second Mobile IP foreign agents through which data packets may be selectively routed from the home agent, the first foreign agent being initially registered with the home agent as a first mobility binding between the subscriber unit and the home agent, the subscriber unit receiving such data packets from a selected one of the first and second base stations, method for maintaining data throughput during a handoff of the subscriber unit from the first base station to the second base station as requested by the subscriber unit, which comprises the steps of:

registering the second foreign agent as a second mobility binding between the subscriber unit and the home agent in response to the handoff request, the second mobility binding constituting a simultaneous binding with the first mobility binding to allow receipt of the data packets from the home agent by both the first and second foreign agents;

storing a sequence of data packets received by the second foreign agent from the home agent after such simultaneous binding registration but before handoff is executed; and

forwarding the stored data packets to the subscriber unit via the second base station starting with a predetermined data packet in the stored sequence after handoff is executed.

5. (Original) A method as defined in claim 4, further comprising the step, prior to the registration step for the second mobility binding, of transmitting a request from the subscriber unit to the home agent to register the second foreign agent as the second mobility binding.

6. (Original) A method as defined in claim 4, further comprising the step of deregistering the mobility binding of the first foreign agent with the home agent after handoff is executed.

7. (Currently amended) A method as defined in claim 6, further comprising the steps of:
~~means associated with the subscriber unit for~~ generating a handoff complete signal after handoff

is executed; and means for applying the handoff complete signal to the first and second base stations.

8. (Currently amended) For use in a wireless communication link adapted to operate in accordance with the Mobile IP protocol and comprising, in combination, a subscriber unit constituting a Mobile IP mobile node, a Mobile IP home agent associated with the mobile node's home network, and first and second base stations respectively associated with first and second Mobile IP foreign agents through which data packets may be selectively routed from the home agent, the first foreign agent being initially registered with the home agent as a first mobility binding between the subscriber unit and the home agent, the subscriber unit receiving such data packets from a selected one of the first and second base stations, a method for maintaining data throughput during a handoff of the subscriber unit from the first base station to the second base station as requested by the subscriber unit, comprising the steps of:

registering the second foreign agent as a second mobility binding between the subscriber unit and the home agent in response to the handoff request, the second mobility binding constituting a simultaneous binding with the first mobility binding to allow receipt of the data packets from the home agent by both the first and second foreign agents;

storing a sequence of data packets received by the second foreign agent from the home agent after such simultaneous binding registration but before handoff is executed;

forwarding the stored data packets to the subscriber unit via the second base station starting with a predetermined data packet in the stored sequence after handoff is executed;

deregistering the mobility binding of the first foreign agent with the home agent after handoff is executed;

generating a handoff complete signal after handoff is executed;

applying the handoff complete signal to the first and second base stations; and

transmitting the first signal portion to the home agent,

wherein A method as defined in claim 7, in which the handoff complete signal includes a first portion constituting a Mobile IP Registration Request with a lifetime value equal to zero, and in which the deregistering step further comprises the step of means including the applying means for transmitting the first signal portion to the home agent.

9. (Currently amended) In a system having a wireless communication link adapted to operate in accordance with the Mobile IP protocol, the link having a mobile subscriber unit constituting a Mobile IP mobile node and in selective radio communication with first and second base stations for receiving data packets therefrom, the subscriber unit being adapted to generate a handoff request signal, a handoff start signal and a handoff complete signal in connection with a handoff of the subscriber unit from the first base station to the second base station, the system further comprising:

a Mobile IP home agent associated with the mobile node's home network, the home agent configured to forward packets destined for the subscriber unit to foreign agents that are bound with the home agent to receive the packets;

first and second Mobile IP foreign agents respectively associated with the first and second base stations and through which data packets may be selectively routed from the home agent to the subscriber unit, the first foreign agent being registered before the handoff with the home agent as a first mobility binding between the subscriber unit and the home agent;

means responsive to the handoff request signal for registering the second foreign agent as a second mobility binding between the subscriber unit and the home agent, the second mobility binding constituting a simultaneous binding with the first mobility binding to allow receipt of the data packets from the home agent by both the first and second foreign agents;

means responsive to the handoff start signal for storing a sequence of data packets received by the second foreign agent from the home agent after such simultaneous binding registration; and

first means responsive to the handoff complete signal for forwarding the stored data packets to the subscriber unit via the second base station starting with a predetermined data packet in the stored sequence.

10. (Original) A system as defined in claim 9, further comprising second means responsive to the handoff complete signal for de-registering the mobility binding of the first foreign agent with the home agent.

11. (New) A system as defined in claim 9 wherein the first Mobile IP foreign agent is further configured to cease routing packets to the subscriber unit in response to the handoff start signal.
12. (New) A system as defined in claim 9 wherein the subscriber unit is further configured to notify the home agent that the binding between the first base station and the home agent is no longer valid.
13. (New) A wireless communication network comprising:
 - a subscriber unit configured to generate a handoff request;
 - a home agent configured to forward packets destined for the subscriber unit to foreign agents that are bound with the home agent to receive the packets;
 - first and second base stations configured to wirelessly transfer packets to the subscriber unit;
 - a first foreign agent configured to:
 - (a) register as a first mobility binding between the subscriber unit and the home agent, the first mobility binding allowing receipt of data packets destined for the subscriber unit, and
 - (b) forward the packets to the first base station for wireless transfer to the subscriber unit by the first base station; and
 - a second foreign agent configured to in response to the handoff request:
 - (a) register the second foreign agent as a second mobility binding between the subscriber unit and the home agent in response to the handoff request, the second mobility binding constituting a simultaneous binding with the first mobility binding to allow receipt of the data packets from the home agent by both the first and second foreign agents, and
 - (b) receive the packets destined for the subscriber unit from the home agent.
14. (New) A wireless communications network as defined in claim 13 wherein the subscriber unit is further configured to generate a handoff start signal.

15. (New) A wireless communication network as defined in claim 14 wherein the first foreign agent is configured to cease forwarding packets destined for the subscriber unit to the first base station in response to the handoff start signal.
16. (New) A wireless communication network as defined in claim 14 wherein the second foreign agent is configured to forward the packets destined for the subscriber unit to the second base station for wireless transfer to the subscriber unit by the second base station in response to the handoff start signal.
17. (New) A wireless communication network as defined in claim 13 wherein the subscriber unit is configured to notify the home agent that the binding between the first base station and the home agent is no longer valid.